**COMMONWEALTH OF VIRGINIA**
**Department of Environmental Quality**
**Valley Regional Office**

# STATEMENT OF LEGAL AND FACTUAL BASIS

Columbia Gas Transmission Corporation
Bickers Compressor Station, Greene County, Virginia
Permit No. VRO40083

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Columbia Gas Transmission Corporation has applied for a Title V Operating Permit for its natural gas transmission compressor facility, located in Greene County, Virginia. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact:_____ Date:

Air Permit Manager:_____ Date:

Regional Director:_____ Date:

## FACILITY INFORMATION

Permittee
Bickers Compressor Station
Columbia Gas Transmission Corporation
P. O. Box 1273
Charleston, West Virginia 25325-1273

Facility
Bickers Compressor Station
Columbia Gas Transmission Corporation
Located three miles southwest of Stanardsville, Greene County, Virginia on Route 604.

AIRS ID No. 51-079-0006

## SOURCE DESCRIPTION

SIC Code: 4922 – Natural Gas Transmission, Gas Production and Distribution

The Bickers Compressor Station (BCS) is a natural gas transmission facility. Natural gas (NG) is received via pipelines from an upstream compression station, is compressed, and is pumped into outlet pipelines for transmission downstream. The BCS utilizes four (4) natural gas-fired stationary reciprocating internal combustion (IC) engines, each nominally rated at 3,200 horsepower (Hp) to drive the natural gas compressors. Auxiliary equipment at the facility includes one natural gas–fired boiler rated at 2.1 x mmBtu/hr heat input, one natural gas pipeline heater rated at 4.0 mmBtu/hr, one natural gas fired generator rated at 82 Hp, one natural gas-fired generator nominally rated at 375 Hp, and numerous insignificant activities.

The facility is a Title V major source of nitrogen dioxide, carbon monoxide, and formaldehyde emissions. This source is located in an attainment area for all pollutants. The facility operates under two NSR Permits issued on May 25, 1990, and April 29, 1997. The facility has an exemption to operate a basement water evaporator system which vents through the compressor engine exhaust stacks.

## COMPLIANCE STATUS

The facility was inspected in 1999 and 2000. The facility was determined to be in compliance at inspection time.

## EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The permitted emission units at this facility consist of the following :

| Emission Unit ID | Stack ID | Emission Unit Description | Size/Rated Capacity* | Pollution Control Device (PCD) Description | PCD ID | Pollutant Controlled | Applicable Permit Date |
|---|---|---|---|---|---|---|---|
| 00201 | E01 | Cooper Bessemer GMWH-8V-275 natural gas-fired IC compressor engine (constructed 1990) | 3,200 horsepower nominal, 3,710 horsepower during periods of low ambient temperature | -- | -- | -- | 05/25/90 |
| 00202 | E02 | Cooper Bessemer GMWH-8V-275 natural gas-fired IC compressor engine (constructed 1990) | 3,200 horsepower nominal, 3,710 horsepower during periods of low ambient temperature | -- | -- | -- | 05/25/90 |
| 00203 | E03 | Cooper Bessemer GMWH-8V-275 natural gas-fired IC compressor engine (constructed 1990) | 3,200 horsepower nominal, 3,710 horsepower during periods of low ambient temperature | -- | -- | -- | 05/25/90 |
| 00204 | E04 | Cooper Bessemer GMWH-8V-275 natural gas-fired IC compressor engine (constructed 1997) | 3,200 horsepower nominal, 3,712 horsepower during periods of low ambient temperature | Clean burn precombustion chamber, turbocharger, air cooler. | -- | -- | 04/29/97 |
| 002G1 | G1 | Waukesha VGF-18GL natural gas fired Auxiliary Generator (constructed 1990) | 375 horsepower nominal; 412.5 horsepower maximum short-term rating. | -- | -- | -- | 04/29/97 |

*The Size/Rated capacity is provided for informational purposes only, and is not for compliance purposes.

**EMISSIONS INVENTORY**

A copy of the 2000 Annual Emissions Update/Emissions Statement and Certification Form for Columbia Gas Transmission Corporation, BCS is attached as Appendix A. Emissions are summarized in the following tables.

| | **2000 Actual Emissions** Criteria Pollutant Emission in Tons/Year | | | | |
|---|---|---|---|---|---|
| Emissions Unit | VOC | NOx | SO2 | PM-10 | CO |
| 00201 Engine | 8.5 | 30.5 | 0.03 | 1.4 | 28.1 |
| 00202 Engine | 3.9 | 13.9 | 0.02 | 0.6 | 12.8 |
| 00203 Engine | 4.1 | 14.7 | 0.02 | 0.7 | 13.5 |
| 00204 Engine | 3.4 | 4.2 | 0.01 | 0.4 | 6.7 |
| 002G1 Engine | 0.0 | 0.5 | 0.0 | 0.0 | 0.1 |
| Total | 19.9 | 63.8 | 0.08 | 3.1 | 61.2 |

The 40 CFR 63, Subpart ZZZZ, Stationary Reciprocating Internal Combustion Engines Maximum Achievable Control Technology Standard (MACT) established pursuant to §112(d) of the federal Clean Air Act has not been promulgate as of July 2002. The tentative proposal date for the Subpart ZZZZ MACT is November 2002. Revised HAP emission factors for two-stroke lean burn engines were published AP-42 on July 2000 (Table 3.2-1). The formaldehyde emission factor is 5.52E-2 lb/mmbtu.

| **2000 Facility Hazardous Air Pollutant Emissions** | |
|---|---|
| Pollutant | Actual Hazardous Air Pollutant Emissions |
| Formaldehyde | 4.3 tons/year |

**EMISSION UNIT APPLICABLE REQUIREMENTS - Internal Combustion Reciprocating Engines (Emission Units 00201, 00202, 00203, and 00204)**

The following Virginia Administrative Codes and the following conditions from the new source review permits dated May 25, 1990, and April 29, 1997, form the basis of the Title V permit conditions. Copies of the new source review permits are included in Appendix B.

**Limitations**

III.A.1 (9 VAC 5-80-110, Condition 5 of 04/29/97 Permit, and Specific Condition 9 of the 05/25/90 Permit)

The approved fuel for four compressor engines is natural gas. A change in fuel may require a permit.

III.A.2 (9 VAC 5-80-110E)

Periodic monitoring provides the method to monitor/control the emissions of nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC) generated by three Cooper Bessemer GMWH-8V-275C2 compressor engines (Emission Units 00201, 00202, and 00203). This is a new requirement.

III.A.3 (9 VAC 5-80-10, 9 VAC 5-50-260, 9 VAC 5-80-110 and Condition 3 of 04/29/97 Permit)

Condition specifies the methods of controlling NOx, CO, and VOC emissions from the fourth Cooper Bessemer GMWH-8V-275C2 compressor engine (Emission Unit 00204). Proper operation and maintenance of the engine, installation of clean burn pre-combustion chamber technology, installation of a turbocharger, and installation of an air cooler shall be used to control engine emissions.

III.A.4 (9 VAC 5-80-110, Condition 8 of 04/29/97 Permit, and Specific Condition 5 of 05/25/90 Permit.)

Each engine (Emission Units 00201, 00202, 00203 and 00204) shall not operate in excess of 28 million horsepower hours per year, calculated monthly for the latest 12 consecutive months.

III.A.5 (9 VAC 5-80-110, Condition 4 of 04/29/97 Permit, and Condition 4 of 05/25/90 Permit)

The nominal horsepower rating of each engine can be exceeded (ambient uprating of the engine) when ambient air temperatures are low (winter weather). The density of winter air is higher than warmer air, resulting in an increase of engine horsepower.

This condition sets a maximum horsepower rating for each engine. Emission Units 00201, 00202, and 00203 are limited to no more than 3710 brake horsepower/engine. Emission Unit 00204 is limited to no more than 3712 brake horsepower.

Typically, ambient uprating on these type of compress engines will not occur at temperatures above 40 °F.

III.A.6 (9 VAC 5-50-260, 9 VAC 5-80-110, Condition 3 of 04/29/97 Permit, Condition 4 of 04/29/97 Permit, Specific Condition 4 of 05/25/90 Permit, and Specific Condition 6 of 05/25/90 Permit)

The permit condition sets emission standards for NOx, CO, and VOC for engine Emission Units 00201, 00202, 00203. Engine Emission Unit 00204 has a maximum emission standard for NOx and an annual average emission standard for NOx.

| **Engine Emission Standards** (grams/brake-horsepower-hr) | Emission Units 00201, 00202, 00203 (per emission unit) | Emission Unit 00204 |
|---|---|---|
| Nitrogen dioxide | 2.5 | |
| Nitrogen Oxides (as $NO_2$) | 2.0* | 2.0 **<br>1.25 *** |
| Carbon Monoxide | 2.3 | |
| Volatile Organic Compound | 0.7 | |

* standard for engine while operating at up to 3710 hp (ambient uprating due to low ambient air temperature)

** standard for engine while operating at up to 3712 hp (ambient uprating due to low ambient air temperature)

***annual average

III.A.7 (9 VAC 5-50-260, 9 VAC 5-80-110, and Specific Condition 6 of 05/25/90 Permit)

Combined emission limits for Emission Units 00201, 00202, 00203 are identified in this condition.

| **Combined Emission Limitation for Emission Units 00201, 00202, 00203** | | |
|---|---|---|
| Pollutant | (lbs/hr) | (tons/yr) |
| Nitrogen Dioxide | 52.9 | 231.7 |
| Carbon Monoxide | 48.7 | 213.2 |
| Volatile Organic Compound | 14.8 | 64.9 |

III.A.8 (9 VAC 5-50-260, 9 VAC 5-80-110, and Condition 10 of 04/29/97 Permit.)

Emission limits for Emission Unit 00204 are identified in this condition.

| **Emission Limitation for Emission Unit 00204** | | |
|---|---|---|
| Pollutant | (lbs/hr) | (tons/yr) |
| Nitrogen oxides (as $NO_2$) | 16.4 | 38.6 |
| Carbon Monoxide | 16.4 | 61.8 |
| Volatile Organic Compound | 8.2 | 30.9 |

III.A.9 (9 VAC 5-50-260, 9 VAC 5-50-80, 9 VAC 5-80-110, Condition 12 of 04/29/97 Permit, and Specific Condition 7 of 05/25/90 Permit)

Visible emissions from stacks E01, E02, E03 (Emission Units 00201, 00202, 00203) are limited to 5% opacity each. Visible emissions from stack E04 (Emission Unit 00204) is limited

to 20% opacity. Opacity during one six-minute period in any one hour of up to 30% is allowed.

III.A.10 (9 VAC 5-80-110, and Condition 20 of 04/29/97 Permit)

The source is required to develop a maintenance schedule and maintain records of scheduled and non-scheduled maintenance for engines Emission Units 00201, 00202, 00203, and 00204.

**Periodic Monitoring and Recordkeeping**

The permit includes provisions for maintaining records of all required emission data and operating parameters necessary to demonstrate compliance. These records include: the scheduled and unscheduled maintenance on the engines, and periodic NOx, $O_2$, and CO measurements. Additionally, the permittee must maintain written operating procedures for the engines and must train all operators on the proper operation of the equipment.

Compliance with the emission limits established for NOx, CO and VOC is achieved by proper operation and maintenance of the engines, and by abiding by the annual limitations on work produced by each engine (bhp-hr). The permit requires the permittee to develop an inspection and maintenance schedule for the engines and to maintain records of all scheduled and non-scheduled maintenance. The permit also requires all operators to be trained on the proper operation of the process. Records of the training shall be maintained.

The permit requires periodic testing to be performed on the exhaust stream of each engine. The testing is required to be conducted on each engine once a year, beginning with the issuance date of the permit. The testing will be conducted using procedures approved by the DEQ; these procedures will not necessarily entail use of EPA reference methods. The purpose of the testing is to provide a reasonable assurance of compliance with emission limits. The testing will likely involve use of portable gas analyzers to measure the NOx, CO, and diluent $O_2$ concentrations in the exhaust of each engine. Carbon monoxide monitoring will serve as a surrogate method for monitoring VOC emissions generated by the engines. When incomplete combustion of fuel occurs, both CO and VOC concentrations increase in the exhaust products of combustion units.

The periodic testing will serve several purposes. First, the testing will be used to demonstrate that proper operation and maintenance of the engines achieve compliance with the established permit limits for NOx, CO, and VOC. Additionally, the periodic testing for CO will provide a measure of the engine operation and combustion efficiency. Second, the measurements will be used to confirm the emission factors which will be employed to demonstrate compliance with annual permit limits.

If the periodic monitoring indicates an exceedance of an emission standard, the permittee is required to take corrective action to correct any equipment which is not operating properly. If corrective action does not eliminate the emissions exceedance, the permittee is required to conduct an EPA reference method test or other test method approved by the DEQ for the pollutant that exceeds the standard. The reference method test will be used to determine the compliance status of the engine(s) with respect to the emission standard and short term (hourly) emission limit. It is worth noting that an exceedance of an emission standard which is measured using a portable gas analyzer may be considered credible

evidence of a violation, however, it does not necessarily establish or correspond to a violation of the permit.

Pollutant-specific emission factors will be used to calculate annual emissions on a monthly basis for each engine. Emission rates will be calculated using the results of a 1991 40 CFR 60, Appendix A stack test on compressor engine Emission Unit 00201 and a 1998 40 CFR 60, Appendix A stack test on compressor engine Emission Unit 00204. (See Appendix D)

The use of these emission factors provides a reasonable assurance of compliance with emission limitations and underscores that the operational and work (bhp-hr) produced limitations are the controlling parameters limiting emissions from the engines. The periodic measurement of NOx and CO emissions will serve as a check on the continued representativeness of the emission factors derived from stack tests.

Annual emissions from the operation of each engine will be calculated on a monthly basis using the following equation:

$$E_i = EF_{i,j} \; x \; C \; x \; O \; x \; \frac{1}{453.593}$$

where:

$E_i$ = Emissions of pollutant i, in lbs/time period

$EF_{I, j = 1, 2, 3}$ = DEQ approved emission factors for emissions of pollutant i from engine j (Emission Unit 00201, 00202, and 00203) measured in grams/break-horsepower-hours (g/bhp-hr). The $EF_{i,j}$ value is derived from the results of a 1991 emissions complianace test for Emission Unit 00201. See Appendix D, Table 6-1 for a copy of the test results.

- 1 .49 g/hp-hr for NOx
- 0.918 g/hp-hr for CO
- 0.285 g/hp-hr for NMHC (VOC)

$EF_{NOx, j = 4}$ = DEQ Approved Emission Factor for emissions of NOx from engine j (Emission Unit 00204) measured in grams/break-horsepower-hours (g/bhp-hr). The $EF_{NOx ,j}$ value is derived from the stack test results of a 1998 emissions test of Emission Unit 00204. See Appendix D for a copy of the test results.

- 0.84 g/hp-hr for NOx

C = Capacity rating of engine, in horsepower (hp).

O = Operating hours for the time period.

453.593 = conversion factor, grams per pound

Although the DEQ or EPA may request the engine emission units be tested for compliance purposes at any time, the periodic monitoring required by the draft Title V permit also specifies when stack testing for compliance purposes may be conducted. Condition III.B.6 states if corrective action has been performed on the engine emission unit and the portable emission monitor continues to show an exceedance of the emission standard (g/bhp-hr), then a compliance test shall be conducted on the engine in accordance with condition III.B.6.c. The compliance test shall be conducted in accordance with test methods outlined in 40 CFR 60, Appendix A or a DEQ approved test method. The compliance test results may be used to revise the emission factors ($EF_{i,j}$ ) used to calculate annual NOx, CO and VOC emission limits. The new emission factor must be DEQ approved.

9 VAC 5-80-110E.2 requires periodic monitoring to yield reliable data from the relevant time period that is representative of the source's compliance with the permit. The following permit conditions include new periodic monitoring requirements as well as previously defined periodic monitoring required in new source review permits.

III.B.1 (9 VAC 5-80-110)

This new periodic monitoring requirement requires documentation of training provided to operators of Emission Units 00201, 00202, 00203, and 00204. This condition serves as monitoring for Conditions III.A.2 and III.A.3.

III.B.2 (9 VAC 5-80-110)

This new periodic monitoring requirement requires written operating procedures, inspection schedules and maintenance schedules for Emission Units 00201, 00202, 00203, and 00204 This condition serves as monitoring for Condition III.A.10.

III.B.3 (9 VAC 5-80-110, Condition 6 of 04/29/97 Permit, and Specific Condition 10 of 05/25/90 Permit)

Each of the Emission Units 00201, 00202, 00203, and 00204 shall be equipped with monitoring devices that provide appropriate data to be used in calculating the work performed by each engine in units of horsepower-hours (hp-hrs). This condition is modified to clarify the monitoring required.

III.B.4 (9 VAC 5-80-110)

The permittee shall provide each engine (Emission Units 00201, 00202, 00203, and 00204) with a device to measure or calculate each engine's load in horsepower, hours of operation, and speed. The permit applicant indicates these parameters are already monitored on each engine, thus this is not a requirement for installation of new monitoring equipment.

III.B.5 (9 VAC 5-80-110 E)

This condition specifies periodic monitoring for the four compressor engines. Periodic monitoring consists of the collection of data to determine the emission rates of NOx (measured as nitrogen dioxide ($NO_2$)), CO and $O_2$. Portable emission monitors are used to

determine pollutant concentration in the gas stream. At a minimum, periodic monitoring of stack emissions shall be conducted once annually for each engine emission unit.

The following data shall be recorded during the stack emissions monitoring: an hourly average concentration of NOx (measured as nitrogen dioxide ($NO_2$)), CO and $O_2$; work (hp-hr) performed by the engine during the test; calculated exhaust gas dry volume flow rate; and duration of the test. Using the data collected, emissions may be calculated in units of grams per brake horsepower-hour and pounds per hour for comparison with emission standards and hourly emission limits in conditions III.A.6 through III.A.7.

Source selected, DEQ approved portable measurement devices will be used to monitor NOx (measured as nitrogen dioxide ($NO_2$)), CO and $O_2$ in the engine exhaust stacks. A test protocol for the initial periodic monitoring procedure will be submitted to the DEQ for approval. Subsequent changes to the protocol must be approved by the DEQ.

Periodic monitoring measurements will be taken at least once semi-annually beginning with the six-month period following the issuance of this permit. Portable analyzers will be used to test all four Emission Units during the initial six-month period. Following the initial six-month period, the permittee will select and conduct periodic monitoring on two emission units. During the next six-month period the permittee will conduct periodic monitoring on the remaining two emission units. Periodic monitoring will be applied to each Emission Unit a minimum of once each calendar year. The DEQ reserves the right to change the frequency of periodic monitoring emission tests.

Periodic monitoring for Emission Unit 00204 will consist of two measurements for NOx emissions during a six-month period. At least one NOx periodic monitoring measurement will be conducted while Emission Unit 00204 is operating in ambient up-rating mode (approaching 3712 hp). If Emission Unit 00204 does not operate in ambient up-rating mode during a calendar year, then a periodic monitoring measurement during ambient uprating of Emission Unit 00204 is not required that year. If ambient uprating of Emission Unit 00204 occurs in a calendar year, and a valid ambient uprating periodic monitoring measurement is not obtained in the calendar year, compliance with the annual average standard of performance for Emission Unit 00204 shall be calculated by substituting the maximum emission rate of 2.0 g Nox/bhp-hr for the missing data point.

Carbon monoxide periodic monitoring serves as surrogate periodic monitoring for VOC, therefore periodic monitoring of VOC is not required. In fuel burning equipment, the change in the emission rate of VOC typically increases or decreases as CO emissions increase or decrease. Incomplete combustion of fuel increases emissions of CO and VOC. Proper operation of the engines result in complete combustion of fuel which decreases both CO and VOC emissions. As explained in Condition III.B.6.c, if periodic monitoring results indicate an exceedance of the CO emission standard and the exceedance cannot be corrected, the engine emission unit shall be tested for compliance with both the CO and the VOC emission standard.

III.B.6 (9 VAC 5-80-110 E)

The condition specifies the course of action to be taken when a periodic monitoring measurement, conducted in accordance with Condition III.B.5, results in a calculated emission rate in excess of the engine's emission standard or hourly emission limit. When an exceedance of the emission standard in grams/breakhorsepower-hours for NOx or CO occurs, the source is required to apply corrective action to the affected engine. Following completion of corrective action, the source repeats the periodic monitoring method contained in Condition III.B.5 to demonstrate the exceedance has been corrected. If the exceedance has not been corrected, the permittee is required to conduct a stack test to determine compliance. Compliance test shall be conducted in accordance with 40 CFR 60, Appendix A methods or other methods as approved by the DEQ.

CO periodic monitoring is a surrogate measure of VOC emissions. The condition requires that engine emission units that are stack tested to determine compliance with CO emission limits shall also be stack tested to determine compliance with VOC emission limits.

III.B.7 (9 VAC 5-80-110)

This condition specifies the frequency and method to be used for maintenance and calibration of the periodic monitoring and parametric monitoring equipment.

The permittee shall maintain and calibrate the portable NOx, CO and $O_2$ emissions monitoring test equipment in accordance with the manufacturer's specifications and recommended calibration frequency. The calibration specifications and calibration frequency may be changed upon request or approval of the DEQ.

III.B.8 (9 VAC 5-80-110 E)

This condition requires the permittee to periodically monitor the opacity of each engine exhaust stack. Monitoring shall occur once each calendar week for a brief time to determine if normal visible emissions are present. Normal visible emissions for engines burning natural gas would be little (less than 5% opacity) or no visible emissions. The condition requires a Method 9 visible emissions test be conduct if the cause of excess visible emissions cannot be corrected. Excess opacity emissions, its cause, and corrective measures taken to eliminate excess opacity shall be documented.

III.B.9 (9 VAC 5-50-50, 9 VAC 5-80-110, Condition 16 of 04/29/97 Permit, and Specific Condition 11 of 05/25/90 Permit)

The permittee is required to record the data specified in permit condition III.B.9. The data recorded includes parametric measurements used to calculate hourly and annual emissions; summary of annual emissions calculated monthly as the sum of each consecutive twelve months; DEQ approved pollutant specific emission factors and equations used to calculate annual emissions; periodic monitoring results; and opacity monitoring results. The recordkeeping requirements contained in Condition 16 of the 04/29/97 Permit and Specific Condition 11 of the 05/25/90 Permit have been modified to meet Part 70 requirements.

III.B.10 (9 VAC 5-80-110)

Periodic monitoring data and calculated values which show an exceedance of applicable emission standards can be considered credible evidence of violation of the permit.

**Testing**

III.C.1 (9 VAC 5-50-30, 9 VAC 5-80-110, and Condition 7 of 04/29/97 Permit)

The permittee shall use test methods in accordance with procedures approved by the DEQ. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Condition III.B.6 specifies an emissions stack test shall be required when periodic monitoring of the engines indicates an uncorrectable emission limit exceedance is present.

The following test methods are recommended for stack testing. Alternative test procedures may be used if approved in advance by the DEQ.

| Pollutant | Test Method (40 CFR Part 60, Appendix A) |
|---|---|
| VOC | EPA Methods 18, 25, 25a |
| NOx | EPA Method 7, 7E |
| CO | EPA Method 10 |
| Visible Emission | EPA Method 9 |

III.C.2 9 VAC 5-80-110

The use of portable emission monitors for periodic monitoring of stack emissions shall be conducted according to the procedures in Condition III.B.5. This is a new requirement.

**Reporting**

III.D.1 9 VAC 5-80-110

The permitee is required to report emission exceedances of the applicable emissions standards, in accordance with Condition IX.E. Compliance tests results shall be provided to the Air Compliance Manager of DEQ within 30 days of conducting the test.

III.D.2 9 VAC 5-80-110

The condition specifies the permittee shall submit reports in accordance with permit conditions VII.C through VII.F.

III.D.3 9 VAC 5-80-110, Condition 23 of 04/29/97 Permit, and General Condition 13 of 05/25/90 Permit

The permittee is required to maintain current emission data and upon request report process and production data, changes in control equipment, and operating schedules.

Additional reporting requirements are as specified in General Condition VII.C of the permit.

**EMISSION UNIT APPLICABLE REQUIREMENTS - Auxiliary Generator Emission Unit 002G1**

The auxiliary generator is classified as an insignificant unit under 9 VAC 5-80-720 C.4.d. since it is rated at 412.5 Hp maximum, which is sufficiently less than 840 HP threshold value. The unit is listed as insignificant in the draft permit; however, the auxiliary generator is limited by permit, dated April 29, 1997, with respect to non-emergency operating hours and is subject to opacity limitations. Therefore, permit limitations for the Auxiliary Generator (Emission Unit 002G1) are included in the draft Title V permit even though the emission unit is an insignificant activity.

**Limitations**

IV.A.1 (9 VAC 5-80-110 and Condition 9 of 04/29/97 Permit)

The approved fuel for the auxiliary generator (Emission Unit 002G1) is natural gas.

IV.A.2 (9 VAC 5-80-110, and Condition 9 of 04/29/97 Permit)

The generator engine (Emission Unit 002G1) shall operate no more than 500 hours per year for the purpose of demonstrating the reliability of the engine and electric generator. The auxiliary generator (Emission Unit 002G1) is to be used for providing power at a location during interruption of service from the normal power supplier.

IV.A.3 (9 VAC 5-50-80 and 9 VAC 5-80-110)

Visible emissions shall not exceed 20 percent opacity except for one six-minute period of not more than 30 percent opacity.

VI.A.4 (9 VAC 5-80-110 and Condition 20 of 04/29/97 Permit)

A maintenance schedule and maintenance records of scheduled and non–scheduled maintenance shall be maintained for the auxiliary generator (Emission Unit 002G1).

**Monitoring and Recordkeeping**

The monitoring and recordkeeping requirements in the April 29, 1997, NSR permit have been modified to meet Part 70 requirements.

IV.B.1 (9 VAC 5-50-50, 9 VAC 5-80-110)

This condition requires the source to monitor and record the number of hours of non-emergency operation of the auxiliary generator (Emission Unit 002G1), calculated monthly as the sum of each consecutive 12-month period. The auxiliary generator is operated occasionally to determine its readiness for emergency operation.

Secondly, the condition requires annual recordkeeping of hours of operation of the auxiliary generator (Emission Unit 002G1) as a result of interruption of service from the normal power supplier. There are no emission limits associated with emergency operation of the unit, therefore, an annual sum of hours of operation are adequate for recordkeeping. The purpose of the monitoring is to demonstrate the emission unit is utilized for emergency situations and not for regular service, such as peak-shaving.

Additional periodic monitoring is not necessary since this emission unit is an insignificant emissions unit and the unit burns natural gas, a clean burning fuel.

IV.B.2 (9 VAC 5-80-110 E)

The NSR permit lacks opacity periodic monitoring for the auxiliary emergency generator (Emission Unit 002G1), therefore the permit requires that the source monitor the exhaust stack of Emission Unit 002G1 for opacity emissions at least once semi-annually. An observation is not required if the emission unit does not operate during a semi-annual period. Periodic monitoring consists of briefly observing the exhaust stack for signs of normal visible emissions. If above normal visible emissions are present, the source is required to take corrective action or perform a 40 CFR 60, Appendix A, Method 9 visible emissions evaluation. The source shall record the date and results of each periodic monitoring observation or Method 9 evaluation.

**Testing**

IV.C.1 (9 VAC 5-50-30, 9 VAC 5-80-110, and Condition 7 of 04/29/97 Permit)

Upon request, test ports shall be provided on the auxiliary generator exhaust stack (Stack ID G1) to allow for emissions testing. The Department and EPA have authority to require testing not included in this permit, if necessary, to determine emission rates.

The following test methods are recommended for stack testing. Alternative test procedures may be used if approved in advance by the DEQ.

| Pollutant | Test Method (40 CFR Part 60, Appendix A) |
|---|---|
| VOC | EPA Methods 18, 25, 25a |
| NOx | EPA Method 7, 7E |
| CO | EPA Method 10 |
| Visible Emission | EPA Method 9 |

**Reporting**

IV.D.1 9 VAC 5-80-110

The permitee is required to report emission exceedances of applicable emissions standards, in accordance with Condition IX.E. Compliance tests results shall be provided to the Air Compliance Manager of DEQ within 30 days of conducting the test.

IV.D.2 9 VAC 5-80-110

The condition specifies the permittee shall submit reports in accordance with permit conditions VII.C through VII.F.

IV.D.3 9 VAC 5-80-110, Condition 23 of 04/29/97 Permit, and General Condition 13 of 05/25/90 Permit)

The permittee is required to maintain current emissions data and upon request report process and production data, changes in control equipment, and operating schedules.

Additional reporting requirements are as specified in General Condition IX.C of the permit.

**INSIGNIFICANT EMISSION UNITS**

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units unless specified in a new source permit.

Insignificant emission units include the following:

| Emission Unit No. | Emission Unit Description | Citation[1] | Pollutant(s) Emitted (5-80-720 B) | Rated Capacity (5-80-720 C) |
|---|---|---|---|---|
| BLR1 | Boiler #1, Heating System Boiler (natural gas-fired) | 9 VAC 5-80-720 C | --- | 2.1 MMBtu/hr |
| | | | | |

| Emission Unit No. | Emission Unit Description | Citation[1] | Pollutant(s) Emitted (5-80-720 B) | Rated Capacity (5-80-720 C) |
|---|---|---|---|---|
| HTR1 | Heater #1, Line Heater (natural gas-fired) | 9 VAC 5-80-720 C | --- | 4.0 MMBtu/hr |
| AO1 | Lube Oil tank | 9 VAC 5-80-720 B | VOC | 8,000 gallons |
| AO2 | Used Oil tank | 9 VAC 5-80-720 B | VOC | 8,000 gallons |
| AO3 | Glycol Tank | 9 VAC 5-80-720 B | VOC, ethylene glycol | 8,000 gallons |
| AO4 | Water mixture Tank (Glycol/Water Mixture) | 9 VAC 5-80-720 B | VOC, ethylene glycol | 8,000 gallons |
| AO5 | Pipeline Liquids Tank | 9 VAC 5-80-720 B | VOC, benzene, ethylbenzene, hexane, toluene, xylene | 8,000 gallons |
| AO6 | Water Mixture Tank | 9 VAC 5-80-720 B | VOC | 8,000 gallons |
| AO7 | Gasoline Tank | 9 VAC 5-80-720 B | VOC, benzene, ethylbenzene, hexane, toluene, xylene | 600 gallons |
| AO8 | Diesel Fuel Tank | 9 VAC 5-80-720 B | VOC, benzene, hexane, xylene | 400 gallons |
| BWIS | Basement Water Injection System | 9 VAC 5-80-720 B | Bis (2-Ethylhexy) phthalate, barium, cadmium, chromium, lead | 7,884,000 gallons |
| 002G1 | Natural Gas Emergency Electrical Generator. | 9 VAC 5-80-720 C.4.d | --- | 375 Hp |
| 002G2 | Ford 6 cylinder - Natural Gas Emergency Electrical Generator. | 9 VAC 5-80-720 C.4.d | --- | 82 Hp |

[1]The citation criteria for insignificant activities are as follows:
9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
9 VAC 5-80-720 B - Insignificant due to emission levels
9 VAC 5-80-720 C - Insignificant due to size or production rate

On October 9, 2000, Columbia Gas Transmission submitted a permit application letter to install and operate a basement water injection system (Emission Unit BWIS) at the Bickers Compressor station site. Water collected from the basement of buildings onsite is injected into and evaporated in the

exhaust stacks of the four internal combustion engines located onsite. The permit application was determined to be exempt from the permitting requirements of 9 VAC 5-80-10. (See Appendix C) The basement water injection system is listed as an insignificant unit.

**STREAMLINED REQUIREMENTS APRIL 29, 1997, PERMIT**

The following conditions in the April 29, 1997, permit have been streamlined in the Title V permit process.

Condition 1

The source has been constructed and is already operating under the conditions of the new source review permit. The Title V permit has its own regulatory requirement (9 VAC 5-80-50) which requires the source to obtain an operating permit. Condition 1 has been streamlined from the permit since the basis of the Title V permit is the Title V permit application.

Condition 2

The equipment specified in Condition 2 has already been constructed. The equipment to be operated is also identified in the Title V permit application. The requirements of this condition have been met, therefore the condition is streamlined from the draft permit.

Condition 10 and 11

The formaldehyde limitation in Condition 10 has been rescinded effective August 2002 and is streamlined from the draft permit. (See Appendix B - Letter from DEQ, dated August 23, 2002, rescinding conditions.)

Condition 11 of the April 29, 1997, permit has been rescinded effective August 2002 and is streamlined from the draft permit. (See Appendix B - Letter from DEQ, dated August 23, 2002, rescinding conditions.)

Justification for the rescission of formaldehyde limitations is contained in 9 Virginia Administrative Code (VAC) 5-60-300.C.4 and C.5 of 9 VAC 5 Chapter 60 Part II Article 5, Emission Standards for Toxic Pollutants from New and Modified Sources (Rule 5-6). 9 VAC 5-60-300.C.4 states that Article 5 (Rule 5-6) shall not apply to a stationary source in a source category that is regulated by an emission standard or other requirement pursuant to §112 of the federal Clean Air Act and subject to a source category schedule for standards. The source is subject to the source category schedule for standards (40 CFR Part 63, Subpart ZZZZ, Stationary Reciprocating Internal Combustion Engines MACT Standards) established pursuant to §112(d) of the federal Clean Air Act. Therefore, 9 VAC 5 Chapter 60, Part, II Article 5 (Rule 6-5) does not apply to this source.

Condition 13 and 14

The source has successfully completed the requirements of Condition 13 which requires the source to conduct stack testing for NO2 emissions from emission unit 00204. The source has successfully completed the requirements of Condition 14 which requires the source to conduct a visible emissions evaluation on the stack associated with emission unit 00204. The requirements of these conditions have been met therefore Condition 13 and 14 are streamlined from the draft permit.

Condition 15

Emission unit 00204 has been constructed, commenced operation, and has been emissions tested. The requirements of the condition have been met therefore Condition 15 is streamlined from the draft permit.

Condition 17

Draft Title V General Condition J concerning Permit Acton for Cause supercedes Condition 17 regarding reasons for modifying or revoking the new source review permit. General Condition 17 is streamlined from the draft permit.

Condition 18

The requirements of NSR Condition 18 are already included in Title V General Condition Q titled Inspection and Entry Requirements. General Condition 18 of the NSR permit is streamlined by General Condition Q.

Condition 19

Draft Title V General Condition F concerning Failure/Malfunction Reporting supercedes the reporting requirements for control equipment malfunction contained in Condition 19. The requirement is streamlined from the draft permit.

The phrase “The portion of the facility which is subject to the provision of Rule 5-3 (9 VAC 5-50-160 et seq.) (toxics) shall shut down immediately upon request of the DEQ” pertains to the state toxics rule, which has been amended and redesignated 9 VAC 5 Chapter 60, Part, II Article 5 (Rule 5-6). Rule 5-6 is no longer applicable to this source since the source is subject to the source category schedule for standards (40 CFR Part 63, Subpart ZZZZ) as required by §112 of the federal Clean Air Act. The phrase is streamlined from the draft permit.

Condition 21

The source has been constructed. The condition has been satisfied and the requirement is streamlined from the draft permit.

Condition 22

The provisions of Condition 22 of the NSR permit are reworded in the Draft Title V permit General Condition T titled Transfer of Permits. Condition 22 of the NSR permit is streamlined from the draft permit.

Condition 23

This condition enumerates reporting requirements for the source. The reporting requirements are reworded and stated in the Title V draft permit conditions: General Condition C titled Recordkeeping and Reporting; General Condition D titled Annual Compliance Certification; General Condition L titled Duty to Submit Information; and Conditions III.D.3 and IV.D.1. Condition 23 of the NSR permit is streamlined from the draft permit.

Condition 24

Title V General Condition S concerning permit availability is more stringent than Condition 24 of the NSR permit. General Condition 24 of the NSR permit is streamlined by General Condition S.

**STREAMLINED REQUIREMENTS MAY 25, 1990, PERMIT**

The following conditions in the May 25, 1990, permit have been streamlined in the Title V permit process.

Specific Condition 1

Condition 1 specifies the name of the source and its location. There is no regulatory citation for this condition in the new source review permit. The condition is streamlined from the draft permit.

Specific Condition 2

The source has been constructed and is already operating under the conditions of the new source review permit. The Title V permit has its own regulatory requirement (9 VAC 5-80-50) that requires the source to obtain an operating permit. Condition 2 has been streamlined from the permit since the basis of the title V permit is the Title V permit application.

Specific Condition 3

The equipment specified in Condition 3 has already been constructed. The equipment to be operated is also identified in the Title V permit application. The requirements of this condition have been met therefore the condition is streamlined from the draft permit.

Specific Condition 8

The source has successfully completed the requirements of Condition 8 which requires the source to conduct stack testing for $NO_2$, CO and VOC on one of the emission units. Testing was conducted on Emission Unit 00201. The requirements of this condition have been met therefore the condition is streamlined from the draft permit.

General Condition 1

The source has satisfied the requirements to notify the DEQ of dates of construction, anticipated start-up and actual start-up, and emissions testing of emission units 00201 through 00203. The condition is streamlined from the draft permit.

General Condition 2

The source has satisfied the requirement to stack test one of the three emission units 00201 through 00203. The source tested emission unit 00201. The condition is streamlined from the draft permit.

General Condition 3

The engines have been constructed for emissions testing. Emissions testing has been conducted on emissions units 00201 and 00204. The requirement is streamlined from the draft permit.

General Condition 4

This condition requires the source to retain records of all emission data and operating parameters. Sections III.B, IV.B, and General Condtion C in the draft Title V permit contain record keeping requirements related to emissions data and operating parameters. These conditions include the record keeping requirements identified in General Condition 4, therefore he requirement in General Condition 4 is streamlined from the draft permit.

General Condition 5

Condition III.B.9 of the draft permit require the source to maintain develop a maintenance schedule and maintain records of maintenance. There are no add on control devices at this facility. General Condition 5 is streamlined from the draft permit.

General Condition 6

Draft Title V General Condition F concerning Failure/Malfunction Reporting supercedes the reporting requirements for control equipment malfunction contained in General Condition 6. The General Condition is streamlined from the draft permit.

The phrase “The portion of the facility which is subject to the provision of Rule 5-3 (non-criteria) shall shut down immediately upon request of the Department” pertains to the state toxics rule,

which has been amended and redesignated 9 VAC 5 Chapter 60, Part, II Article 5 (Rule 5-6). Rule 5-6 is no longer applicable to this source since the source is subject to the source category schedule for standards (40 CFR Part 63, Subpart ZZZZ) as required by §112 of the federal Clean Air Act. The phrase is streamlined from the draft permit.

General Condition 7 and 8

Draft Title V General Condition J concerning Permit Acton for Cause supercedes General Condition 7 regarding reasons for modifying or revoking the new source review permit. Draft Title V General Condition J concerning Permit Acton for Cause supercedes General Condition 8 regarding operation of the facility as represented in the permit application. General Condition 7 and 8 are streamlined from the draft permit.

General Condition 9

The source has been constructed. The condition has been satisfied and the requirement is streamlined from the draft permit.

General Condition 10 and 11

The provisions of General Condition 10 and 11 of the NSR permit are reworded in the Draft Title V permit General Condition G titled Severability and in General Condition T.2 titled Transfer of Permits. General Condition 10 and 11 of the NSR permit are streamlined from the draft permit.

General Condition 12

This condition has no applicable requirements that limit specific aspects of the sources operation. The condition states DEQ and Regulatory policy with respect to compliance determination and compliance with the regulations. Although the condition contains valid statements about DEQ recourse when a violation occurs, the condition does not set forth standards for operating the source. General Condition 12 of the NSR permit is streamlined from the draft permit.

General Condition 14

Title V General Condition S concerning permit availability is more stringent than General Condition 14 of the NSR permit. General Condition 14 of the NSR permit is streamlined by General Condition S.

General Condition 15

The requirements of NSR General Condition 15 are already included in Title V General Condition Q titled Inspection and Entry Requirements. General Condition 15 of the NSR permit is streamlined by General Condition Q.

**GENERAL CONDITIONS**

The draft permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of exceedances of permit requirements or any excess emissions, including those caused by upsets, within one business day.

**Comments on General Conditions**

**General Condition B: Permit Expiration**

This condition refers to the Board taking action on a permit application. The Board referred to is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by ? ? 2.1-20.01:2 and ' ? 10.1-1185 of the *Code of Virginia,* and the "Department of Environmental Quality Agency Policy Statement NO. 3-2001".

This general conditions cites the entire Article(s) that follow:

B.2. Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Permits for Stationary Sources
B.3. Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Permits for Stationary Sources

This general condition cites the sections that follow:

B. 9 VAC 5-80-80. "Application"
B.2. 9 VAC 5-80-150. "Action on Permit Applications"
B.3. 9 VAC 5-80-80. "Application"
B.4. 9 VAC 5-80-80. "Application"
B.4. 9 VAC 5-80-140. "Permit shield"
B.5. 9 VAC 5-80-80. "Application"

**General Condition F: Failure/Malfunction Reporting**

Section 9 VAC 5-20-180 requires malfunction and excesses emissions reporting within 4 hours. Section 9 VAC 5-80-250 also requires malfunction reporting; however, reporting is required within 2 days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to this section including Title 5 facilities. Section 9 VAC 5-80-250 is from the Title 5 regulations. Title 5 facilities are subject to both Sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within 4 day time business hours of the malfunction.

**General Condition U: Malfunction as an Affirmative Defense**

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in section 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

This general condition cites the sections that follow:

U.2.d. 9 VAC 5-80-110. Permit Content
U.2.d. 9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction

**STATE ONLY APPLICABLE REQUIREMENTS**

The following Virginia Administrative Codes have specific requirements only enforceable by the State:

9 VAC 5-60-300, Part II, Article 5, Emission Standards for Toxic Pollutants from New and Modified Sources (Rule 6-5)

The state-only enforceable toxics rule, 9 VAC 5 Chapter 60, Part II, Article 5 (Rule 6-5) does not apply to this source because 9 VAC 5-60-300.C.4 and C.5 states that Article 5 (Rule 5-6) shall not apply to a stationary source in a source category that is regulated by an emission standard or other requirement pursuant to §112 of the federal Clean Air Act and subject to a source category schedule for standards..

Additionally 9 VAC 5-60-300.C.7 states that Article 5 (Rule 5-6) shall not apply to a generator that burns only natural gas.

**FUTURE APPLICABLE REQUIREMENTS**

The internal combustion engines operated at this facility may be subject to the proposed 40 CFR Part 63, Subpart ZZZZ, Stationary Reciprocating Internal Combustion Engines Maximum Achievable Control Technology Standard (MACT) established pursuant to §112(d) of the federal Clean Air Act. The tentative proposal date for the MACT standard for internal combustion engines is November 2002.

Using source supplied emissions factors (4.728E-4 lb/bhp-hr, AP-42 Table 3.2-1)), the potential-to-emit formaldehyde for emission units 00201 through 00204 is:

28E6 hp-hr/yr x 4 engines x 4.725E-4 lb/bhp-hr x 1/2000 = 26.5 tons formaldehyde/year.

**INAPPLICABLE REQUIREMENTS**

On September 6, 2002, the permitee submitted comments on the draft Title V operating permit. In the comments, the permitee identified two inapplicable requirements and requested the inapplicable

requirements be included in the Title V permit application. The inapplicable requirements are shown in the following table.

| Citation | Title of Citation | Description of applicability |
|---|---|---|
| 40 CFR 64 | Compliance Assurance Monitoring | The Compliance Assurance Monitoring rule applies to pollutant-specific emission units with pre-control device emissions of regulated pollutants exceeding major source thresholds. The units must have control devices in place and applicable requirements for the subject pollutant. The rule requires sources to monitor the operation and maintenance of the control devices to ensure compliance with applicable requirements. The Bickers Compressor Station does not have any individual emission units that emit pre-control device emissions above the major source thresholds. |
| 40 CFR 82 | Protection of Stratospheric Ozone | The Bickers Compressor Station does not use any ozone depleting substances regulated by the subject rule. |

## COMPLIANCE PLAN

No compliance plan is required of this applicant.

## CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

## PUBLIC PARTICIPATION

A public notice regarding the draft permit will be in the September 12, 2002, edition of *The Greene County Record*. Public comments will be accepted from September 12, 2002, through October 14, 2002.

**Appendix A**

**2000 Annual Emissions Update, Emissions Statement, and Certification Form for**

**Columbia Gas Transmission Corporation**
**Bickers Compressor Station**

**Appendix B**

**New Source Review Permits for**
**Columbia Gas Transmission Corporation**
**Bickers Compressor Station**

**Permits Dated May 25, 1990, and April 29, 1997**

**State Toxics Condition Rescission Letter Dated August 23, 2002**

**Appendix C**

**December 14, 2002, Exemption Letter and**
**October 9, 2002, Application for Permit to Construct and Operate A**
**Basement Water Injection System (Emission Unit BWIS)**

**Columbia Gas Transmission Corporation**
**Bickers Compressor Station**

**Appendix D**
**Supporting Documentation for**
**Statement of Basis**